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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,963	03/19/2004	Takuya Yano	12065-0010	6490
22902	7590	12/14/2006	EXAMINER	
CLARK & BRODY 1090 VERMONT AVENUE, NW SUITE 250 WASHINGTON, DC 20005			WARTALOWICZ, PAUL A	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/803,963

Applicant(s)

YANO ET AL.

Examiner

Paul A. Wartalowicz

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

As to the arguments regarding Suga et al., it would be obvious to add the noble metal element before heating the mixture based upon the teachings of Golden.

As to the arguments regarding double patenting, Golden does teach a noble element being incorporated in the amorphous precursor before being heated to produce a perovskite. The claim language of the instant application "precipitation product produced by" is open language and does not limit the process as consisting of language does, and therefore, that Application No. 10/809709 teaches uses a reducing agent does not teach away from the instant application.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 10/809709 in view of Golden (U.S. 7014825).

Application No. 10/809709 teaches a method of producing a perovskite complex oxide wherein, at the time of producing a perovskite complex oxide phase by heat treating a precursor substance that is a powdery starting material containing at least one rare earth element R and at least one transition metal element T, there is used as the precursor substance an amorphous substance containing the R and T components (claim 1). Application No. 10/809709 fails to teach that the noble metal element is incorporated in the amorphous precursor substance.

However, Golden teaches a precursor mixture comprising salts of lanthanide, transition metals, and noble elements that are dried and heated to make a perovskite structure (Throughout document, col. 7).

Therefore, it would have been obvious to one of ordinary skill in the art to provide noble metal salts in the precursor material of Application No. 10/809709 because it is well known in the art to mix noble metals with salts of rare earth metals and transition metals to form a precursor mixture (Throughout document, col. 7) as taught by Golden.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 5-9, 12, and 15 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Golden (U.S. 5977017) in view of any one of Toshima et al. (U.S. 6632524) and Ward et al. (U.S. 6827917).

Golden teaches a method for making a perovskite (col. 1, lines 10-18) comprising salts of noble metals, rare earth metals, and transition metals mixed to form a precursor material (Throughout document, particularly col. 6, lines 1-30) that is dried and calcining

to form a perovskite (Throughout document, particularly col. 6, lines 5-10). Calcining is typically performed at a temperature greater than 400°C (Throughout document, particularly col. 6, lines 25-30).

As to the limitation that the amorphous substance is a precipitation product is obtained by the claimed steps, it appears that the instantly claimed product by process is the same as that which is claimed (precipitation product). When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*, 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

As the limitations wherein the noble metal element-containing perovskite complex oxide exhibits certain properties, the prior art of record teaches a substantially similar process of making to that of the claimed invention such that the properties of the product made by said process of the prior art of record are substantially similar to that of the claimed invention.

If the claimed limitations of forming a precipitate are required, Toshima et al. teaches a process for producing a perovskite precursor comprising a nickel precipitate (transition element, Throughout document, particularly col. 6, lines 1-5) comprising mixing an alkaline aqueous solution with an aqueous solution of nickel salt and a hydrazine reducing agent for the purpose of forming a precipitate without forming any hydroxide as an intermediate (Throughout document, particularly col. 6, lines 35-67).

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Ward et al. teaches adding a precipitant to a mixture of elements in order to form a precipitate. The precipitate is then heated to produce a perovskite. (Throughout document, particularly col. 2, 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide forming a precipitate comprising mixing an alkaline aqueous solution with an aqueous solution of an element in Golden in order to form a precipitate that is a precursor for a perovskite as taught by Toshima et al. or Ward et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 5-9, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al. (U.S. 6395675) in view of Golden (U.S. 7014825); and any one of Toshima et al. (U.S. 6632524) and Ward et al. (U.S. 6827917).

Suga et al. teach a process for making a catalyst of a mixed oxide containing a noble metal element (perovskite complex oxide, col. 1, line 54-col. 2, line 5) wherein an aqueous slurry comprising powder comprising a mixed oxide of a transition element and a rare earth element (precursor, col. 5, lines 10-15, 48-52) and a powder comprising a noble element (the first powder comprises a noble metal element, col. 5, lines 48-51; col. 1, lines 55-58) is mixed, wherein the amorphous substance is a precipitation product produced by reacting an aqueous solution of salts of the rare earth metal and the transition metal and a precipitant (ammonium hydroxide is the precipitant, col. 5, lines 15-22), and then heating the aqueous slurry to a temperature of 400°-900°C (some amount of drying is inherently taught by the step of heating at a temperature, col. 5, lines 52-55). Suga fails to teach that the precursor (before addition of noble element) is amorphous.

However, Golden teaches a method for making perovskite catalysts comprising salts of noble metals, rare earth metals, and transition metals mixed to form a precursor material (Throughout document, particularly col. 7, lines 29-43).

Therefore, it would have been obvious to one of ordinary skill in the art to mix salts of noble metals, rare earth metals, and transition metals to form a precursor material (Throughout document, particularly col. 7, lines 29-43) in order to make a

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perovskite having a noble element incorporated therein (Throughout document, particularly col. 3, lines 30-45).

As to the limitation that the amorphous substance is a precipitation product is obtained by the claimed steps, it appears that the instantly claimed product by process is the same as that which is claimed (precipitation product). When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*, 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

As the limitations wherein the noble metal element-containing perovskite complex oxide exhibits certain properties, the prior art of record teaches a substantially similar process of making to that of the claimed invention such that the properties of the product made by said process of the prior art of record are substantially similar to that of the claimed invention.

Suga et al. teach a process for making a catalyst of a mixed oxide containing a noble metal element as described above in claim 1. Suga et al. does not explicitly teach wherein a precursor substance is an amorphous substance and that the noble element is incorporated in the amorphous substance.

As to the limitation that the amorphous substance is a precipitation product obtained by the claimed steps, it appears that the instantly claimed product by process is the same as that which is claimed (precipitation product). When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is

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shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*, 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

As the limitations wherein the noble metal element-containing perovskite complex oxide exhibits certain properties, the prior art of record teaches a substantially similar process of making to that of the claimed invention such that the properties of the product made by said process of the prior art of record are substantially similar to that of the claimed invention.

As to the limitation of the slurry is adjusted to a pH of 6 or higher in co-presenting nitrate ions and ammonium ions thereof, Suga et al. teach that the nitrates of the rare earth element and transition element are dissolved into water and ammonium is added to form a precipitate necessitating that ammonium and nitrate ions are co-present in the slurry. The addition of the ammonium to the slurry would raise the pH such that the pH of 6 or higher is inherently taught. If the pH is not inherently taught, it would be obvious based on the pH would be very close to the claimed range. The prior art range is so close that one skilled in the art would have expected it to have the same properties. *Titanium Metals Corp. v. Banner*, 227 USPQ 773.

As to the limitation of the mole ratio of the total amount of nitrate ions and ammonium ions to the total amount of rare earth element and transition metal element in the amorphous substance is greater than 0.6, Suga et al. teach that the nitrates of a rare earth element and a transition element are dissolved into water and ammonium is added to form a precipitate necessitating that ammonium and nitrate ions are co-

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present in the slurry such that an optimum amount of nitrate and ammonium ions would be present in the slurry.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of nitrate and ammonium ions that would be present in the slurry, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize the amount of nitrate and ammonium ions that would be present in the slurry by the reasoned explanation that the nitrates of a rare earth element and a transition element are dissolved into water and ammonium is added to form a precipitate necessitating that ammonium and nitrate ions are co-present in the slurry such that an optimum amount of nitrate and ammonium ions would be present in the slurry.

If the claimed limitations of forming a precipitate are required, Toshima et al. teaches a process for producing a perovskite precursor comprising a nickel precipitate (transition element, Throughout document, particularly col. 6, lines 1-5) comprising mixing an alkaline aqueous solution with an aqueous solution of nickel salt and a hydrazine reducing agent for the purpose of forming a precipitate without forming any hydroxide as an intermediate (Throughout document, particularly col. 6, lines 35-67).

Ward et al. teaches adding a precipitant to a mixture of elements in order to form a precipitate. The precipitate is then heated to produce a perovskite. (Throughout document, particularly col. 2, 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide forming a precipitate comprising mixing an alkaline aqueous solution with an aqueous solution of an element in Golden in order to form a precipitate that is a precursor for a perovskite as taught by Toshima et al. or Ward et al.

Claims 3, 4, 10, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suga et al. (U.S. 6395675) in view of Golden (U.S. 7014825); any one of Toshima et al. (U.S. 6632524) and Ward et al. (U.S. 6827917); and Ishii et al. (U.S. 5503815).

Suga et al. teach a process for making a catalyst of a mixed oxide containing a noble metal element as described above in claim 1. Suga et al. fail to teach the slurry is adjusted to a pH of 6 or higher in co-presenting nitrate ions and ammonium ions therein.

Ishii et al., however, teach a process for making a lanthanum manganite powder (lanthanum manganite is a perovskite, col. 1, lines 9-12, col. 2, line 65-col. 3, line 4) wherein salts of lanthanum and manganese are dissolved in nitric acid at room temperature (col. 3, lines 41-46; col. 4, lines 48-52) wherein ammonia is added for the purpose of adjusting the solution to a pH of 7.2 (col. 4, lines 50-55) for a chemically similar process of making a perovskite.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein salts of lanthanum and manganese are dissolved in nitric acid at room temperature (col. 3, lines 41-46; col. 4,

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lines 48-52) wherein ammonia is added in Suga et al. in order to adjust the solution to a pH of 7.2 (col. 4, lines 50-55) as taught by Ishii et al. for a chemically similar process of making a perovskite.

This combined teaching meets the limitation of co-presenting nitrate and ammonium ions in the slurry.

As to the limitation of the mole ratio of the total amount of nitrate ions and ammonium ions to the total amount of rare earth element and transition metal element in the amorphous substance is greater than 0.6, it would be obvious based on the reasoned explanation that enough nitric acid would be used to dissolve the lanthanide and manganese salts and enough ammonia would be added in order to adjust the solution to a pH of above 6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of nitrate and ammonium ions present in the slurry, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize the amount of nitrate and ammonium ions present in the slurry by the reasoned explanation that an optimum amount of nitrate and ammonium ions present in the slurry are necessary to dissolve salts of lanthanum and manganese (nitric acid disassociates into nitrate ions in the slurry) and to adjust the pH of the solution (ammonia disassociates into ammonium ions in the slurry), respectively:

Claims 3, 4, 10, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Golden (U.S. 7014825) in view of any one of Toshima et al. (U.S. 6632524) and Ward et al. (U.S. 6827917); and Ishii et al. (U.S. 5503815).

Golden teach a process for making a catalyst of a mixed oxide containing a noble metal element as described above in claim 1.

Golden fail to teach the slurry is adjusted to a pH of 6 or higher in co-presenting nitrate ions and ammonium ions therein.

Ishii et al., however, teach a process for making a lanthanum manganite powder (lanthanum manganite is a perovskite, col. 1, lines 9-12, col. 2, line 65-col. 3, line 4) wherein salts of lanthanum and manganese are dissolved in nitric acid at room temperature (col. 3, lines 41-46; col. 4, lines 48-52) wherein ammonia is added for the purpose of adjusting the solution to a pH of 7.2 (col. 4, lines 50-55) for a chemically similar process of making a perovskite.

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide wherein salts of lanthanum and manganese are dissolved in nitric acid at room temperature (col. 3, lines 41-46; col. 4, lines 48-52) wherein ammonia is added in Suga et al. in order to adjust the solution to a pH of 7.2 (col. 4, lines 50-55) as taught by Ishii et al. for a chemically similar process of making a perovskite.

This combined teaching meets the limitation of co-presenting nitrate and ammonium ions in the slurry.

As to the limitation of the mole ratio of the total amount of nitrate ions and ammonium ions to the total amount of rare earth element and transition metal element in the amorphous substance is greater than 0.6, it would be obvious based on the reasoned explanation that enough nitric acid would be used to dissolve the lanthanide and manganese salts and enough ammonia would be added in order to adjust the solution to a pH of above 6.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of nitrate and ammonium ions present in the slurry, since it has been held that discovering an optimum value or a result effective variable involved only routine skill in the art. In re Boesch, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980). The artisan would have been motivated to optimize the amount of nitrate and ammonium ions present in the slurry by the reasoned explanation that an optimum amount of nitrate and ammonium ions present in the slurry are necessary to dissolve salts of lanthanum and manganese (nitric acid disassociates into nitrate ions in the slurry) and to adjust the pH of the solution (ammonia disassociates into ammonium ions in the slurry), respectively.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. Wartalowicz whose telephone number is (571)

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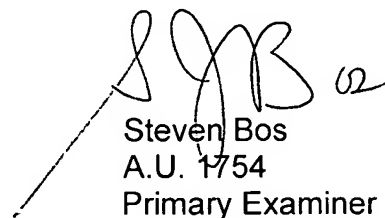
272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Paul Wartalowicz
December 5, 2006



Steven Bos
A.U. 1754
Primary Examiner